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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,741	07/01/2003	Adnan M.M. Mjalli	41305.287124	2564
7590	07/29/2004			
Charles W. Calkins Kilpatrick Stockton LLP 1001 West Fourth Street Winston-Salem, NC 27101-2410			EXAMINER BADIO, BARBARA P	
			ART UNIT	PAPER NUMBER
			1616	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,741

Applicant(s)

MJALLI ET AL.

Examiner

Barbara P. Badio, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,11-15,29,30,32,33 and 44-51 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1,2,11-15,29,30,32,33 and 44-51 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. The Markush group set forth in the claims contains a plurality of patentably distinct compounds far too numerous to list individually. Due to the numerous variables in the claims, e.g., L₁, L₂, Aryl₁, Aryl₂, X, Y, R₇, R₈, R₉, R₁₀, R₁₈, R₁₉, etc. and their widely divergent meanings, a precise listing of inventive groups cannot be made. For this reason, restriction to one of the following Groups is required under 35 U.S.C. 121, wherein a Group is a set of patentably distinct invention of a broad statutory category, (e.g. Compounds, Method of Use, Method of Making, etc.): The following groups are exemplary:

Group I. Claims 1, 2 and 11-15 (in part), drawn to compounds and compositions wherein each of L₁ and L₂ is hydrocarbon group of from 1 to 6 carbons, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -CH₂-, classified in class 564, subclass 123+.

Group II. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein each of L₁ and L₂ is direct bond, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -CH₂-, classified in class 564, subclass 123+.

Group III. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein one of L₁ and L₂ is a hydrocarbon group of from 1 to 6 carbons and the other is a direct bond, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring

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system such as phenyl, biphenyl or naphthyl and Y is $-\text{CH}_2-$, classified in class 564, subclass 123+.

Group IV. Claims 1, 2 and 11-15 (in part), drawn to compounds and compositions wherein each of L_1 and L_2 is hydrocarbon group of from 1 to 6 carbons, each of Aryl_1 and Aryl_2 is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is $-\text{O}-$, classified in class 564, subclass 123+.

Group V. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein each of L_1 and L_2 is direct bond, each of Aryl_1 and Aryl_2 is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is $-\text{O}-$, classified in class 564, subclass 123+.

Group VI. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein one of L_1 and L_2 is a hydrocarbon group of from 1 to 6 carbons and the other is a direct bond, each of Aryl_1 and Aryl_2 is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is $-\text{O}-$, classified in class 564, subclass 123+.

Group VII. Claims 1, 2 and 11-15 (in part), drawn to compounds and compositions wherein each of L_1 and L_2 is hydrocarbon group of from 1 to 6 carbons, each of Aryl_1 and Aryl_2 is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is $-\text{N}(\text{H})-$, classified in class 564, subclass 123+.

Group VIII. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein each of L_1 and L_2 is direct bond, each of Aryl_1 and Aryl_2 is a

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carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -N(H)-, classified in class 564, subclass 123+.

Group IX. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein one of L₁ and L₂ is a hydrocarbon group of from 1 to 6 carbons and the other is a direct bond, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -N(H)-, classified in class 564, subclass 123+.

Group X. Claims 1, 2 and 11-15 (in part), drawn to compounds and compositions wherein each of L₁ and L₂ is hydrocarbon group of from 1 to 6 carbons, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -S- or -SO₂-, classified in class 564, subclass 123+.

Group XI. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein each of L₁ and L₂ is direct bond, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -S- or -SO₂-, classified in class 564, subclass 123+.

Group XII. Claims 1, 2 and 11-15 (in part) drawn to compounds and compositions wherein one of L₁ and L₂ is a hydrocarbon group of from 1 to 6 carbons and the other is a direct bond, each of Aryl₁ and Aryl₂ is a carbocyclic aromatic ring system such as phenyl, biphenyl or naphthyl and Y is -S- or -SO₂-, classified in class 564, subclass 123+.

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2. In accordance with the decisions in *In re Harnisch*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980); and *Ex parte Hozumi*, 3 USPQ2d 1059 (bd. Pat. App. & Int. 1984), restriction of a Markush group is proper where the compounds within the group either (1) do not share a common utility, or (2) do not share a substantial structural feature disclosed as being essential to that utility. In addition, a Markush group may encompass a plurality of independent and distinct inventions where two or more members are so unrelated and diverse that a prior reference anticipating the claim with respect to one of the members would not render the other member(s) obvious under 35 U.S.C. 103.

3. Applicant is further required under 35 U.S.C. 121 to elect a single disclosed species from under the elected Group for search purposes, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

All compounds falling outside the class(es) and subclass(es) of the selected compound and any other subclass encompassed by the election above will be directed to nonelected subject matter and will be withdrawn from consideration under 35 U.S.C.

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121 and 37 C.F.R. 1.142(b). Applicant may reserve the right to file divisional applications on the remaining subject matter. The provisions of 35 U.S.C. 121 apply with regard to double patenting covering divisional applications.

4. The above list is not exhausted as it would be impossible under the time constraints due to the sheer volume of subject matter instantly claimed. Therefore, if desired, upon election of a single compound, applicants can review the claims and disclosure to determine the scope of the invention and can **set forth** a group of compounds that are so similar within the same inventive concept and reduction to practice. Markush claims must be provided with support in the disclosure for each member of the Markush group. See MPEP 608.01(p). Applicant should exercise caution in making a selection of a single member for each substituent group on the base molecule to be consistent with the written description.

5. Applicant is reminded that upon cancellation of claims to non-elected invention, the inventors must be amended in compliance with 37 C.F.R. 1.48(b) if one of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 C.F.R. 1.17(i).

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6. Rationale Establishing Patentable Distinctiveness Within Each Group

Each Invention Set listed above is directed to compounds which are recognized in the art as being distinct from one another because of their diverse chemical structure, their different chemical properties, modes of action, different effects and reactive conditions (MPEP 806.04, MPEP 808.01). Additionally, the level of skill in the art is not such that one invention would be obvious over either of the other inventions, i.e. they are patentable over each other. Chemical structures that are similar are presumed to function similarly, whereas chemical structures that are not similar are not presumed to function similarly. The presumption even for similar chemical structures though is not irrebuttable, but may be overcome by scientific reasoning or evidence showing that the structure of the prior art would not have been expected to function as the structure of the claimed invention. Note that in accordance with the holdings of Application of Papesch, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and In re Lalu, 223 USPQ 1257 (Fed. Cir. 1984), chemical structures are patentably distinct where the structures are either not structurally similar, or the prior art fails to suggest a function of a claimed compound would have been expected from a similar structure.

In addition, because of the plethora of classes and/or subclasses in each of the Groups, a serious burden is imposed on the examiner to perform a complete search of the defined areas. Therefore, because of the reasons given above, the restriction set forth is proper and not to restrict would impose a serious burden in the examination of this application.

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7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Telephone Inquiry

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara P. Badio, Ph.D. whose telephone number is 571-272-0609. The examiner can normally be reached on M-F from 6:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary L. Kunz can be reached on 571-272-0887. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Barbara P. Badio, Ph.D.
Primary Examiner
Art Unit 1616

BB
July 23, 2004